

DETAILED ACTION

RESPONSE TO ARGUMENTS

1. Applicant's arguments filed 08/24/2009 have been fully considered but they are not persuasive. Objection to Figure 1 in the Drawings is maintained. Objection to Figures 4-5 and 7 in the Drawings is withdrawn. Objection to the title of the invention and the Specification are withdrawn. Objection to the claims 1, 3, 9, 16-17 and 19-22 are withdrawn.

2. The instant application having Application Number: 10/590,260 filed on 08/18/2006 has a total of 3 remaining claims pending for examination, wherein claims 1-15, 18 and 20-22 are canceled, and claims 16-17 and 19 are pending for examination; there are 2 independent claims and 1 dependent claim, all of which are examined below.

3. In response to applicant's arguments (on page 10) with regard to the Objection of Figure 1 in the Drawings that the current submitted Figure 1 is more clear than the original; applicant's arguments have fully been considered, but are not found to be persuasive.

The examiner respectfully disagrees, because the currently submitted Figure 1 does not clearly show every element, such as the Figure 1 in application 10/780,999,

Art Unit: 2181

having the same assignee as the current application and the inventors of the instant application are also listed in application 10/780,999.

4. In response to applicant's arguments (on pages 12-13 and 14-15) with regard to the independent claims 16 and 19 rejected under 35 U.S.C. 103(a) that the combination of the references does not teach/suggest every claimed feature because none of Sitte's devices (Sitte, Fig. 1, ref. 22, 26, 30 and 34), that are connected to Sitte's junction (Sitte, Fig. 1, ref. 20), comprises a bus controller having a unique address, as these devices (Sitte, Fig. 1, ref. 22, 26, 30 and 34) are not smart devices (Sitte, Fig. 1, ref. 14, 16, 18-19, 21, 27 and 29), that have the corresponding microcontroller (e.g. bus controller) for formulating and transmitting data packets; applicant's arguments have fully been considered, but are not found to be persuasive.

The examiner respectfully disagrees, because the above claimed feature corresponding to the devices comprising a bus controller having a unique address and connected to the junction is functionally equivalent to Sitte's devices (Sitte, Fig. 1, ref. 22, 26, 30 and 34) that are connected to Sitte's junction (Sitte, Fig. 1, ref. 20 and Fig. 11) having the bus controller (Sitte, Fig. 11, ref. 220-230); as it was agreed upon during the interview dated 12/10/2009, the bus controller having the unique address is to allow the control module to identify each of the devices, which is functional equivalent to Sitte's devices (Sitte, Fig. 1, ref. 22, 26, 30 and 34) being identified by the control module (Sitte, Fig. 1, ref. 12) via the junction's (Sitte, Fig. 1, ref. 20 and Fig. 11) bus controller (Sitte, Fig. 11, ref. 220-230) for proper communication between the control

Art Unit: 2181

module and the devices connected to the junction (Sitte, Fig. 1; Fig. 11; col. 4, ll. 39-45; col. 7, l. 8 to col. 8, l. 51; col. 9, ll. 39-64; col. 13, ll. 17-22 and col. 15, l. 18 to col. 17, l. 49).

Additionally, Sitte also teach/suggest that a smart device having the bus controller is connected to the junction, as "... virtually any other type of sensing element that can provide a signal representing a particular characteristic of the environment surrounding the sensor ..." (Sitte, col. 15, ll. 25-28) is connected to the junction.

Furthermore, it is to the best of the examiner's understanding that the claimed feature corresponding to the devices comprising a bus controller having a unique address and connected to the junction is operating in accordance to Controller Area Network (CAN) protocol (Specification, page 8, lines. 16-20 and page 9, lines 6-12), and since Sitte's system is operating in accordance to Controller Area Network (CAN) protocol as well (Sitte, Fig. 1; Fig. 11; col. 4, ll. 39-45; col. 7, l. 8 to col. 8, l. 51; col. 9, ll. 39-64; col. 13, ll. 17-22 and col. 15, l. 18 to col. 17, l. 49), the operation of Sitte's system is functionally equivalent to the operation of claimed feature, as both are utilizing the same Controller Area Network (CAN) protocol.

5. In response to applicant's arguments (on pages 13-15) with regard to the independent claims 16 and 19 rejected under 35 U.S.C. 103(a) that the combination of the references does not teach/suggest the claimed feature "... a second end which is connected to a corresponding electrical connector that in turn is removably connectable to the device ...," as Sitte simply does not disclose how the device 22, 26, 30 and 34

Art Unit: 2181

are connected to their corresponding cable; for all we know, the cables are hard wired to the devices, as is standard with proximity switches and photoelectric device of this sort; applicant's arguments have fully been considered, but are not found to be persuasive.

The examiner respectfully disagrees, because Sitte's devices can be added or replaced within the CAN bus system; therefore, Sitte does teach/suggest the devices to be removably connected to the corresponding electrical connector (Sitte, Fig. 1; Fig. 11; col. 4, ll. 39-45; col. 7, l. 8 to col. 8, l. 51 and col. 15, l. 18 to col. 17, l. 49).

6. In response to applicant's arguments (on pages 13-14) with regard to the independent claim 16 rejected under 35 U.S.C. 103(a) that the combination of the references does not teach/suggest the claimed feature for connecting the devices to the T-connectors; applicant's arguments have fully been considered, but are not found to be persuasive.

Please note that the features upon which applicant relies (i.e., connecting the devices to the T-connector) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. In response to applicant's arguments (on page 14) with regard to the independent claim 16 rejected under 35 U.S.C. 103(a) that the combination of the

Art Unit: 2181

references does not teach/suggest the claimed feature "at least two control signal supply cables, " as Sitte does not disclose what is inside the cables connecting the devices 22, 26, 30, 34 to the junction 20, and contrary to the Examiner's assertion, these cables are not similar to the cable 740 shown in Figure 11, since Sitte teaches that the cable 740 is only used to connect a smart device to the common bus 10; and to be sure, if the devices 22, 26, 30, 34 were to include two signal wires and two power wires, as does the cable 740, one would presume that the junction 20 would not be necessary; applicant's arguments have fully been considered, but are not found to be persuasive.

The examiner respectfully disagrees, because the examiner is not certain where in Sitte teaches that the cable 740 is only used to connect a smart device to the common bus 10, or how the applicant came to the conclusion that Sitte teaches junction 20 would not be necessary if the devices 22, 26, 30, 34 were to include two signal wires and two power wires, as does the cable 740. Furthermore, because Sitte's system communicates in accordance to the Controller Area Network (CAN) protocol, the cables connecting to every devices within the system need to conform to the same Controller Area Network (CAN) protocol; therefore, cables connecting to the devices 22, 26, 30, 34 are similar to cable 740.

Please note that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Wherein the examiner relined on Sitte and Suganuma

Art Unit: 2181

for the teaching of the above claimed feature, wherein Sitte teaches at least two devices 22, 26, 30, 34 of Fig. 1 are connected to the junction 20 of Fig. 1 via the correspond electrical connector and one of the control signal supply cable, as the devices have the corresponding cable attached similar to that of cable 740 of Fig. 11 for supplying the control signal (Fig. 1; Fig. 11; col. 4, ll. 39-45; col. 7, l. 8 to col. 8, l. 51 and col. 15, l. 18 to col. 17, l. 49) and Suganuma teaches a CAN system comprising wherein each branch cables comprises said at least two control signal supply cables (Fig. 1; Fig. 7 and col. 1, l. 23 and col. 2, l. 42), by combining the branch cables having parallel interconnection configuration to the devices with AAPA and Sitte's control signal supply cables, the resulting combination further teach the branch cable having at least two control signal supply cables interconnecting between the junction and the corresponding device.

Furthermore, as discussed above, because both the instant invention and Sitte's system operate in accordance to Controller Area Network (CAN) protocol, the "at least two control signal supply cables" is functionally equivalent to Sitte's cable interconnecting the corresponding device to the junction.

8. In response to applicant's arguments (on page 15) with regard to the independent claim 19 rejected under 35 U.S.C. 103(a) that the combination of the references does not teach/suggest the claimed feature "... a plurality of branch cable which each comprise at least two control signal cables connected between the junction

Art Unit: 2181

and a corresponding electrical connector ..."; applicant's arguments have fully been considered, but are not found to be persuasive.

The examiner respectfully disagrees, because Sitte's system communicates in accordance to the Controller Area Network (CAN) protocol, the cables connecting to every devices within the system need to conform to the same Controller Area Network (CAN) protocol; therefore, cables connecting to the devices 22, 26, 30, 34 are similar to cable 740, wherein cable 740 have at least two control signal cables (Fig. 7, ref. 746-747).

9. As per claim 17, dependent claim 17 is not patentable at least due to direct dependency on the rejected independent claim 16.

10. In responding to all applicant's arguments, the examiner will maintain his position and the current rejection of record.

I. INTERVIEW SUMMARY

11. During the interview dated 12/10/2009, the examiner request the attorney to clarify the core novelty of the instant invention, wherein the attorney explained that the core novelty of the instant application is the combination of the claimed limitations currently recited in the independent claims; furthermore, the attorney clarified that the bus controller having the unique address is to allow the control module to identify each of the devices.

12. During the interview dated 12/11/2009, the examiners requested the attorney to further distinguish the core novelty of the instant invention from Sitte (US Patent 5,469,150), wherein the attorney explained that Sitte's smart device differ from the instant invention's smart device, as Sitte's smart device is unable to be recognized by the control module. During the interview, it was also agreed upon that the overall inventive concept is to have a cable and a harness with connectors, wherein the connectors are able to receive peripheral devices with a processor that can be recognized by the control module.

II. OATH / DECLARATION

13. The oath/declaration has been reviewed by the examiner and is found to comply with the provisions of 37 CFR 1.63.

III. FOREIGN PRIORITY

14. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

IV. DRAWINGS

15. The drawings are objected to because the elements in Figure 1 are not clearly distinguishable. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any

Art Unit: 2181

amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

V. REJECTIONS BASED ON PRIOR ART

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Sitte (US Patent 5,469,150), Suganuma et al. (US Patent 7,349,479).

17. As per claim 16, AAPA teaches a control system for a subsea installation, the control system comprising:

a control module (Specification, p. 1, ll. 8-33); and

a plurality of devices (e.g. sensors, actuators) which are connected to the control module (Specification, p. 1, ll. 8-33).

AAPA does not teach the control system comprising: a common bus ... the plurality of devices are each removably connectable to the common bus ... a bus controller having a unique address ... comprises a junction and a plurality of branch cables ... at least two control supply cables

Sitte teaches a control system comprising:

a common bus (Fig. 1, ref. 10 and Fig. 11, ref. 770, 772, 780, 782) which is connected to a control module (e.g. programmable control logic (PLC) 12 of Fig. 1) and which comprises at least one cable unit (e.g. cable unit between the T-connectors), (Fig. 1; col. 7, l. 8 to col. 8, l. 51 and col. 15, l. 18 to col. 17, l. 49); and

a plurality of devices (Fig. 1, ref. 14, 16, 18-19, 21-22, 26-27, 29-30, 34) which are each removably connectable (e.g. via replacement or addition) to the cable unit (col. 7, l. 8 to col. 8, l. 51 and col. 15, l. 18 to col. 17, l. 49);

wherein each one of the devices comprises a bus controller having a unique address (e.g. identification bits) (Fig. 5-8, ref. 220-230; Fig. 11, ref. 220-230; col. 4, ll. 63-66; col. 11, l. 46 to col. 13, l. 22 and col. 15, l. 18 to col. 17, l. 49);

wherein the control module (Fig. 1, ref. 12) comprises means for communicating with each one of the devices over the common bus (Fig. 5-8, ref. 220-230; Fig. 11, ref. 220-230; col. 7, l. 8 to col. 8, l. 51; col. 9, ll. 39-64; col. 13, ll. 17-22 and col. 15, l. 18 to col. 17, l. 49), as the programmable control logic communicate via forwarding commands to the devices or receiving data from the devices; and

wherein the cable unit comprises a junction (Fig. 1, ref. 20), and a plurality of branch cables (e.g. branch cables connected to the corresponding devices 22, 26, 30, 34 of Fig. 1), each of the plurality of branch cables comprising a first end which is connected to the junction (e.g. the end of the branch cable connecting to the junction 20 of Fig. 1), and a second end which is connected to a corresponding electrical connector (e.g. the end of the branch cable that is connected to the device 22, 26, 30, 34 of Fig. 1) that in turn is removably connected (e.g. via replacement or addition) to one of the devices (Fig. 1, ref. 22, 26, 30, 34), wherein at least two control signal supply cables which each extend between said first and second ends and are connected to said junction and said corresponding electrical connector (e.g. at least two devices 22, 26, 30, 34 of Fig. 1 are connected to the junction 20 of Fig. 1 via the correspond electrical connector and one of the control signal supply cable, as the devices have the corresponding cable attached similar to that of cable 740 of Fig. 11 for supplying the control signal) (Fig. 1; Fig. 11; col. 4, ll. 39-45; col. 7, l. 8 to col. 8, l. 51 and col. 15, l. 18 to col. 17, l. 49), wherein during the interview dated 12/10/2009 it was agreed upon that the device having the bus controller and connected to the junction is to allow the control module to identify the device, which is functionally equivalent to Sitte's devices (Sitte,

Art Unit: 2181

Fig. 1, ref. 22, 26, 30 and 34) that are connected to Sitte's junction (Sitte, Fig. 1, ref. 20 and Fig. 11) having the bus controller (Sitte, Fig. 11, ref. 220-230), as Sitte's devices (Sitte, Fig. 1, ref. 22, 26, 30 and 34) are identified by the control module (Sitte, Fig. 1, ref. 12) via the junction's (Sitte, Fig. 1, ref. 20 and Fig. 11) bus controller (Sitte, Fig. 11, ref. 220-230) for proper communication between the control module and the devices connected to the junction.

It would have been obvious for one of ordinary skill in this art, at the time of invention was made to include Sitte's control system configuration into AAPA's subsea installation for the benefit of utilizing the Controller Area Network (CAN) protocol which permits efficient communication between individual devices including sensors and actuators at a faster data rate in a high security environment (Sitte, col. 2, l. 59 to col. 3, l. 5 and col. 4, ll. 1-38) to obtain the invention as specified in claim 16.

AAPA and Sitte do not teach the control system comprising: wherein each of the branch cables comprises said at least two control signal supply cables that are directly electrically connected to each other at said corresponding electrical connector.

Suganuma teaches a CAN system comprising wherein each branch cables comprises said at least two control signal supply cables that are directly electrically connected to each other at said corresponding electrical connector (Fig. 1; Fig. 7 and col. 1, l. 23 and col. 2, l. 42), by combining the branch cables in parallel interconnection configuration to the devices into AAPA and Sitte's control signal supply cables, the resulting combination teaches the control signal supply cable for one of the devices is

Art Unit: 2181

directly connected to the control signal supply cable for another one of the devices in parallel, which have the equivalent electrical interconnection configuration as each of the branch cables having the at least two control signal supply cables that are connected at the corresponding electrical connector.

It would have been obvious for one of ordinary skill in this art, at the time of invention was made to include Suganuma's parallel interconnection with corresponding electrical termination into AAPA and Sitte's CAN system, not only because it is a requirement for the CAN system's communication bus to be properly terminated at the end, but also for the benefit of having an enhanced fail-safe performance for a break failure of the two-wire communications line (Suganuma, col. 2, ll. 60-65) to obtain the invention as specified in claim 16.

18. As per claim 17, AAPA, Sitte and Suganuma teach all the limitations of claim 16 as discussed above, where Sitte and Suganuma further teach the control system comprising wherein each of said branch cables further comprise at least two control signal return cables which extend between said first and second ends and are connected to said junction and said corresponding electrical connector (Sitte, Fig. 1; Fig. 11; col. 4, ll. 39-45; col. 7, l. 8 to col. 8, l. 51; col. 15, l. 18 to col. 17, l. 49 and Suganuma, Fig. 1; Fig. 7 and col. 1, l. 23; col. 2, l. 42), having similar parallel interconnection configuration as the control signal supply cables.

Art Unit: 2181

19. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Sitte (US Patent 5,469,150) and Longsdorf et al. (US Patent 6,006,338).

AAPA teaches a control system for a subsea installation, the control system comprising:

a control module (Specification, p. 1, ll. 8-33); and

a plurality of devices (e.g. sensors, actuators) which are connected to the control module (Specification, p. 1, ll. 8-33).

AAPA does not teach the control system comprising: a common bus ... the plurality of devices are each removably connectable to the common bus ... a bus controller having a unique address ... a junction and a plurality of branch cables ... at least two control signal cables ... a current loop

Sitte teaches a control system comprising:

a common bus (Fig. 1, ref. 10 and Fig. 11, ref. 770, 772, 780, 782) which is connected to a control module (e.g. programmable control logic (PLC) 12 of Fig. 1) and which comprises at least one cable unit (e.g. cable unit between the T-connectors), (Fig. 1; col. 7, l. 8 to col. 8, l. 51 and col. 15, l. 18 to col. 17, l. 49); and

a plurality of devices (Fig. 1, ref. 14, 16, 18-19, 21-22, 26-27, 29-30, 34) which are each removably connectable (e.g. via replacement or addition) to the cable unit (col. 7, l. 8 to col. 8, l. 51 and col. 15, l. 18 to col. 17, l. 49);

wherein each one of the devices comprises a bus controller having a unique address (e.g. identification bits) (Fig. 5-8, ref. 220-230; col. 4, ll. 63-66; col. 11, l. 46 to col. 13, l. 22 and col. 15, l. 18 to col. 17, l. 49);

wherein the control module (Fig. 1, ref. 12) comprises means for communicating with each one of the devices over the common bus (Fig. 5-8, ref. 220-230; Fig. 11, ref. 220-230; col. 7, l. 8 to col. 8, l. 51; col. 9, ll. 39-64; col. 13, ll. 17-22 and col. 15, l. 18 to col. 17, l. 49), as the programmable control logic communicate via forwarding commands to the devices or receiving data from the devices; and

wherein the cable unit comprises a junction (Fig. 1, ref. 20), and a plurality of branch cables (e.g. branch cables connected to the corresponding devices 22, 26, 30, 34 of Fig. 1), each of the plurality of branch cables comprising a first end which is connected to the junction (e.g. the end of the branch cable connecting to the junction 20 of Fig. 1), a second end which is connected to a corresponding electrical connector (e.g. the end of the branch cable that is connected to the device 22, 26, 30, 34 of Fig. 1) that in turn is removably connected (e.g. via replacement or addition) to one of the devices (Fig. 1, ref. 22, 26, 30, 34), and at least two control signal cables which each extend between said first and second ends and are connected to said junction and said corresponding electrical connector (e.g. wherein the devices 22, 26, 30, 34 of Fig. 1 are connected to the junction 20 of Fig. 1 via the correspond electrical connector and the corresponding control signal cables 746-747 of Fig. 11, as the devices have the corresponding cable attached similar to that of cable 740 of Fig. 11) (Fig. 1; Fig. 11; col. 4, ll. 39-45; col. 7, l. 8 to col. 8, l. 51 and col. 15, l. 18 to col. 17, l. 49), wherein during the interview dated 12/10/2009 it was agreed upon that the device having the bus controller and connected to the junction is to allow the control module to identify the device, which is functionally equivalent to Sitte's devices (Sitte, Fig. 1, ref. 22, 26, 30

Art Unit: 2181

and 34) that are connected to Sitte's junction (Sitte, Fig. 1, ref. 20 and Fig. 11) having the bus controller (Sitte, Fig. 11, ref. 220-230), as Sitte's devices (Sitte, Fig. 1, ref. 22, 26, 30 and 34) are identified by the control module (Sitte, Fig. 1, ref. 12) via the junction's (Sitte, Fig. 1, ref. 20 and Fig. 11) bus controller (Sitte, Fig. 11, ref. 220-230) for proper communication between the control module and the devices connected to the junction.

It would have been obvious for one of ordinary skill in this art, at the time of invention was made to include Sitte's control system configuration into AAPA's subsea installation for the benefit of utilizing the Controller Area Network (CAN) protocol which permits efficient communication between individual devices including sensors and actuators at a faster data rate in a high security environment (Sitte, col. 2, l. 59 to col. 3, l. 5 and col. 4, ll. 1-38) to obtain the invention as specified in claim 19.

AAPA and Sitte do not teach the control system comprising: wherein each of said control signal cables comprises a current loop which is routed through said corresponding electrical connector and said junction.

Longsdorf teaches a control system comprising wherein each of said control signal cables comprises a current loop (e.g. loop current) which is routed through said corresponding electrical connector and said junction (Fig. 1-2; col. 3, l. 29 to col. 4, l. 50 and col. 5, ll. 24-30), by combining the loop current with AAPA and Sitte's control signal cables configuration, the loop current is then routed through each AAPA and Sitte's corresponding electrical connector and junction.

Art Unit: 2181

It would have been obvious for one of ordinary skill in this art, at the time of invention was made to include Longsdorf's loop current into AAPA and Sitte's subsea installation for the well known benefit that current loop provides accurate signaling and able to supply power to the devices, as well as for the benefit of having a self diagnostic and set-up process transmitter that is able to communicate when there is inadequate power on the process link (Longsdorf, col. 2, ll. 29-36) to obtain the invention as specified in claim 19.

VI. CLOSING COMMENTS

Conclusion

a. STATUS OF CLAIMS IN THE APPLICATION

The following is a summary of the treatment and status of all claims in the application as recommended by **M.P.E.P. 707.07(i)**:

a(1) CLAIMS REJECTED IN THE APPLICATION

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

b. DIRECTION OF FUTURE CORRESPONDENCES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Kuan (Mike) Lee whose telephone number is (571) 272-0671. The examiner can normally be reached on 8AM to 5PM.

IMPORTANT NOTE

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 14, 2009
/Chun-Kuan Lee/
Examiner, Art Unit 2181

Chun-Kuan (Mike) Lee
Examiner
Art Unit 2181